

Technical Bulletin #44:

Rice Leaffolder – *Cnaphalocrocis medinalis*

Introduction

This bulletin is intended to help Cambodia HARVEST clients follow the basic practices recommended by our technical team in order to reduce the risk and increase yields in rice production.

The rice leaffolder is a very common rice pest in Cambodia. This insect usually damages rice crops from a young stage through flowering.

Description

The adult rice leaffolder is a yellow-brown moth. Leaffolder caterpillars fold the rice leaves around themselves and attach the leaf margins together with silk strands. Each female lays around 300 eggs at night during a lifecycle of three to 10 days. Larvae are yellow, turn yellowish-green with brown heads as they mature, and are about 12-25 mm long. Each larva can make two to four folded leaves. Pupa is about 9-12 mm long and is found inside the rolled leaf. Adults are yellow brown in color. Adults usually emerge in the evening. Females lay eggs at night.



Adult moth



Larva



Pupa

Should I control rice leaffolder?

By themselves, leaffolders rarely cause much – if any – yield loss. Folded leaves restrict photosynthesis and while inside the folded leaf, the caterpillar feeds by scraping off the leaf surface tissue. The damage looks bad, but rarely reduces yields. For example, before panicle initiation (PI), 50% of the leaves can be damaged without reducing yield.

Rice plants are susceptible to leaffolders from seedling to flowering. Yields may be reduced if the leaffolder damages the flag leaf (the last leaf to emerge from the plant).

Factors favoring insect development

- 1) Heavily fertilized fields
- 2) High humidity and shady areas
- 3) High plant density

Controlling the leaffolder

Prevention measures:

Let natural enemies help you. Biological control agents of leaffolders include parasitic wasps, predatory beetles, spiders, and predatory crickets. Killing biological control agents with pesticides could lead to pest outbreaks. Therefore, do not use insecticides indiscriminately. Sometimes you'll find dead larvae turning black and hanging from leaves. These caterpillars are infected with a virus. Such dead caterpillars can be collected, crushed in a small amount of water, and sprayed on the crop to spread the virus to other caterpillars.



Damage by feeding larvae



Damage as seen in the field

Cultural practices that prevent leaffolder outbreaks:

- Rotate rice with a different crop
- Avoid ratoon culture of rice as leaffolders will easily transfer to the new crop
- Flood and plow field after harvesting if possible to kill any remaining larvae and pupae
- Remove grassy weeds from fields and borders as they may be alternate host to leaffolders and other pests
- Use a correct plant density
- Use balanced fertilizer programs as advised by Cambodia HARVEST

Control:

Look for leaffolders from tilling to flowering stage. Carefully break the silk strands that hold the edges of folded leaves and remove the caterpillars inside. Do not drop the live caterpillars into the paddy water; they may find their way back onto rice plants. Caterpillars can be fed to chickens or ducks, or made into compost. Dry and crush the caterpillars to make fish food.

Chemical control:

Most farmers in Cambodia lack the necessary safety equipment and expertise to use pesticides safely and therefore should only use them as a last option. Consult with a Cambodia HARVEST technician before you decide to use any pesticides to control leaf folders.

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